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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,867	12/29/2003	Eric A. Jacobsen	P18404	3706

25694 7590 10/18/2006

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EXAMINER	
PHAM, TUAN	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,867	JACOBSEN, ERIC A.	
	Examiner	Art Unit	
	TUAN A. PHAM	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,9-13,15-17,21-25 and 27-30* is/are rejected.

7)☒ Claim(s) *5,8,14,18-20 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/07/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 10/07/2005 has been considered by Examiner and made of record in the application file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. **Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Arviv et al. (U.S. Pub. No.: 2003/0045307, hereinafter, "Arviv").**

Regarding claims 1 and 7, Arviv teaches a method of detecting an interfering device in a wireless network, the method comprising:

comparing adaptive modulation information for a communication channel between at least two terminals in both an uplink direction and a downlink direction to determine if a difference exists (see figures 1, 2, 7-8, downlinks 110a-110c, uplink 112a-112c, the processor 210 will monitor and compare the uplink and downlink over time with the threshold and detecting the uplink or downlink have the interference occur, then use the technique modulation to adjust the interference of the uplink or downlink, [0009-0010,0029-0031]) and

if a difference exists determining that a potential interferer is present in the wireless network (see figures 1, 2, 7-8, downlinks 110a-110c, uplink 112a-112c, the processor 210 will monitor and compare the uplink and downlink over time with the threshold and detecting the uplink or downlink have the interference occur, then use the technique modulation to adjust the interference of the uplink or downlink, [0009-0010,0029-0031]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2-3, 6, 9-13, 15-17, 21-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arviv et al. (U.S. Pub. No.: 2003/0045307,

hereinafter, "Arviv") in view of Razavilar et al. (Pub. No.: US 2003/0097623, hereinafter, "Razavilar").

Regarding claims 2, and 10, Arviv disclosed invention, but fails to disclose orthogonal frequency division multiplexing (OFDM) and adaptive bit loading (ABL). However, Razavilar teaches such features (see [0030]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Razavilar into view of Arviv in order to reduce the interference for providing a good transmission in the system.

Regarding claim 3, Arviv further teaches the adaptive modulation information comprises modulation orders in the uplink direction and modulation orders in the downlink direction (see [0010]).

Regarding claims 6 and 9, Razavilar further teaches an access point and WLAN (see [0021, 0030]).

Regarding claim 11, Arviv further teaches hand held mobile (see [0004]).

Regarding claims 12, 17, and 23, Arviv a system for detecting an interfering device in a wireless network, the system comprising:

a comparator unit coupled with the transceiver and configured to

compare modulation in an uplink direction and a downlink direction and identify, if any, a difference between the modulation orders for the uplink direction and the modulation orders for the downlink direction (see figures 1, 2, 7-8, downlinks 110a-110c, uplink 112a-112c, the processor 210 will monitor and compare the uplink and downlink over time with the threshold and detecting the uplink or downlink have the

interference occur, then use the technique modulation to adjust the interference of the uplink or downlink, [0009-0010,0029-0031]).

It should be noticed that Arviv fails to teach a transceiver operative to send and receive communications in multi-carrier signals including a plurality of modulated subcarriers. However, Razavilar teaches such features (see figure 3, [0030]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Razavilar into view of Arviv in order to reduce the interference for providing a good transmission in the system.

Regarding claim 13, Razavilar further teaches an omnidirectional antenna coupled to the transceiver and operative to broadcast and receive the multi-carrier signals (see figure4, antenna 402, omnidirectional is well known).

Regarding claims 15 and 21, Razavilar further teaches the multi-carrier signals are modulated using OFDM (see [0030]).

Regarding claims 16 and 22, Razavilar further teaches an access point and WLAN (see [0021, 0030]).

Regarding claim 24, Razavilar further teaches orthogonal frequency division multiplexing (OFDM) and adaptive bit loading (ABL) (see [0030]).

Regarding claim 25, Razavilar further teaches comparing adaptive power loading per subcarrier in the uplink direction and adaptive power loading per subcarrier in the downlink direction to identify a power loading difference (see [0042]).

Regarding claim 27, Arviv a system for detecting an interfering device in a wireless network, the system comprising:

a comparator communicating with the modulation adaptor and configured to compare modulation in an uplink direction with modulation in a downlink direction with the network device and identify, if any, a difference between the modulation orders for the uplink direction and the modulation orders for the downlink direction. (see figures 1, 2, 7-8, downlinks 110a-110c, uplink 112a-112c, the processor 210 will monitor and compare the uplink and downlink over time with the threshold and detecting the uplink or downlink have the interference occur, then use the technique modulation to adjust the interference of the uplink or downlink, [0009-0010,0029-0031]).

It should be noticed that Arviv fails to teach a channel estimator configured to estimate one or more channel characteristics of a communication channel with a network device, a modulation adaptor communicating with the channel estimator and configured to determine a modulation order for the network device to modulate subcarriers based on the estimated frequency dependent channel characteristics. However, Razavilar teaches such features (see figure 3, figure 4, [0012, 0027-0030]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Razavilar into view of Arviv in order to reduce the interference for providing a good transmission in the system

Regarding claim 28, Razavilar further teaches an access point and WLAN (see [0021, 0030]).

Regarding claim 29, Razavilar further teaches orthogonal frequency division multiplexing (OFDM) and adaptive bit loading (ABL) (see [0030]).

Regarding claim 30, Arviv further teaches hand held mobile (see [0004]).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arviv et al. (U.S. Pub. No.: 2003/0045307, hereinafter, "Arviv") in view Jami et al. (Pub. No.: US 2003/0220109, hereinafter, "Jami").

Regarding claim 4, Arviv disclosed invention, but fails to disclose power loading in the uplink direction and adaptive power loading in the downlink direction. However, Jami teaches such features (see [0042]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Jami into view of Arviv in order to reduce the interference for providing a good transmission in the system.

Allowable Subject Matter

7. Claims 5, 8, 14, 18-20, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Marinier et al. (U.S. Pub. No. 2004/0032850), Pan et al. (U.S. Pub. No. 2002/0015393), Fitton et al. (U.S. Pub. No. 2004/0004998), and Hashimoto (U.S. Pub. No. 2004/0022176) are not

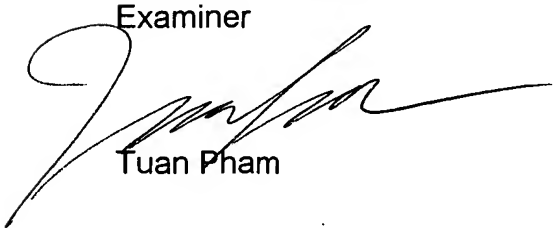
applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

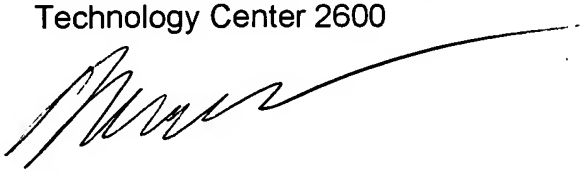
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2618
October 13, 2006
Examiner



Tuan Pham

Supervisory Patent Examiner
Technology Center 2600



Matthew Anderson